

***FlyBy Math™* Alignment**  
**2005 Connecticut Mathematics Curriculum Framework**

**1. ALGEBRAIC REASONING: PATTERNS AND FUNCTIONS:** Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools and technologies.

***How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?***

**1.2 Represent and analyze quantitative relationships in a variety of ways.**

**Performance Standards and Expectations**

a. Describe the effects of characteristics of mathematical relationships on the way the relationships are represented.

**(1)** Use graphs, tables, equations and verbal descriptions to represent and analyze changes in linear and nonlinear relationships.

**(2)** Recognize that a linear relationship has a constant rate of change.

***FlyBy Math™* Activities**

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

--Interpret the slope of a line in the context of a distance-rate-time problem.

**1.3 Use operations, properties and algebraic symbols to determine equivalence and solve problems.**

**Performance Standards and Expectations**

a. Solve problems using a variety of algebraic methods.

**(1)** Solve problems using concrete, verbal, symbolic, graphical and tabular representations.

***FlyBy Math™* Activities**

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

**2. NUMERICAL AND PROPORTIONAL REASONING:** Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.

***How are quantitative relationships represented by numbers?***

**2.1 Understand that a variety of numerical representations can be used to describe quantitative relationships.**

**Performance Standards & Expected Performances**

a. Represent real- world situations and solutions to problems using the appropriate symbolic form (fractions, decimals or percents).

**(6)** Solve practical problems involving rates, scale

***FlyBy Math™* Activities**

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Compare airspace scenarios for both the same and different starting conditions and the same and different

factors, mixtures and percents with proportions.  (7) Estimate to predict outcomes and determine reasonableness of results, and describe whether an estimate is an over- or underestimate.	rates.  --Predict outcomes and explain results of mathematical models and experiments.
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**4. WORKING WITH DATA: PROBABILITY AND STATISTICS:** Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.

***How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?***

**4.1 Collect, organize and display data using appropriate statistical and graphical methods.**

<b>Performance Standards &amp; Expected Performances</b>  a. Select the appropriate visual representation of data based on the kind of data collected and the purpose for its use.  (2) Organize and display data using appropriate graphical representations and make and defend predictions based on patterns and trends.	<b><i>FlyBy Math™</i> Activities</b>  --Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.  --Predict outcomes and explain results of mathematical models and experiments.
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